

Modern architectural solutions, coordinated to humanize space, are able to create a favorable psychological climate in which the main role is played by anthropometric data and comfortable environment for patients.

An important condition in the design of hospices is maximization of the therapeutic potential use of the environment. Namely, architectural organization of the environment for the patients should create positive emotions and help to tune them in to an optimistic mood. Undoubtedly, a combination of such factors as the geographical location of the hospice, its architecture, internal structure, organization infrastructure is needed to create a fulfilling life of patients and eliminate the psychophysiological and social barriers. Psychophysiological favorable atmosphere can be create with the help of not only a special architecture and decoration of buildings, but also using a diversity of landscapes, creating a system of various therapeutic environments.

The abovementioned factors allow to conclude that hospice is an example of a specific human habitat, the design of which should take into account the spatial interaction between the patient and the society. An important condition for the original idea of hospice implementation is researching of the development mechanisms and interaction of the elements in the system "patient-space-society."

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## **NOISE REDUCTION OF POWER TRANSFORMERS IN FOR SOLVING THE TASK OF PROVIDING ACOUSTIC COMFORT AND SAFETY FOR ELECTRIC ENGINEERING PERSONNEL AT POWER PLANTS**

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The problem of human protection from a high level noise pollution today is one of the most relevant tasks and its solution has received considerable attention throughout the world. One of the main sources of high level of noise is the noise of power transformers at power plants. The operation of power equipment is associated with noise emissions and often exceeds the health standards. Persistent cycle of operation of power equipment makes special hazards of noise exposure on humans.

The issues of transformer's high level noise suppression include a complex of tasks. Firstly by the causes and sources of transformer's noise should be analyzed, as well as the methods of measurement and analysis of noise, and, later, on the basis of the received data to determine the ways of transformer's noise reduction.

As it is known, high power transformers emit noise in which low-frequency tonal sounds dominate. The spectrum of the noise changes in time. There are three main sources of noise in transformers:

- the noise from the magnetic core of the transformer, created by such a phenomenon as magnetostriction;
- the noise as a derivative of vibration caused by the load current flowing through the transformer's winding;
- vibroacoustic sources of energy (vibration of the transformer core, windings, cooling system devices).

According to the sanitary norms, the noise level at permanent workplaces in the production facilities on the enterprise premises must not exceed 80 dBA. However, in practice, the allowable norms from the high power transformer's can reach 25 to 32 dBA.

High level of transformer's noise causes pathological changes in hearing, affects the nervous and cardiovascular system, resulting in sleep disturbance, contributes to mental illnesses. People working in conditions of prolonged noise exposure experience irritability, headaches, dizziness, memory weakening, fatigue, which can result in errors and accidents during the execution of the production tasks.

Noise disease starts to develop after 3-5 years of a systematic stay of the employee in the zones with high noisiness. The probability of hearing loss, depending on the equivalent sound level and work experience ranges from 1 to 81 %.

Occupational diseases that are associated with the sound effect occupy the first place among other diseases of workers in the field of power engineering, and according to the World Health Organization, 2% of all deaths are caused by diseases associated with excessive noise.

During the certification of workplaces on working conditions at power plants it was found that more than at 30% of jobs the noise level exceeds the standard value, which further leads to the occurrence of occupational diseases.

To reduce noise at the workplace organizational and technical measures are developed and implemented. The main organizational activities include:

- carrying out monitoring of noise characteristics of jobs by measuring the noise and timing of the stay of workers at the workplace during the work shift;
- rational organization of work and rest of the workers;
- development and implementation of the plan of technical measures for protection of workers against noise by the occupational health protection services of power engineering after enterprises companies;
- conducting of medical examinations of the employees;
- evaluating of the workplaces according to the working conditions.

The main technical measures allowing to provide acoustic comfort of the personnel are:

- use of soundproof steel housing mounted on the transformer's tank;
- installation of transformers in separate rooms. To reduce sound reflection from the walls and ceiling they are equipped with the latest noise absorbing lining of fiberglass materials.

- partial or complete lining of walls and ceilings with noise absorbing materials to absorb sound energy;
- installation of suspended ceilings in industrial premises. The isolation of air noise increases with filling the air gap between the ceiling and the ceiling material by noise absorbing airborne sound insulation.

Application of the above mentioned measures allows to improve the working conditions of personnel in power engineering, eliminate workplace harmful effects of noise or minimize their negative impact.

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## **CURRENT TRENDS IN FORMATION OF THE ARCHITECTURAL - SPATIAL ENVIRONMENT OF THE CULTURAL-EDUCATIONAL CENTERS**

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Since origin the workmen's clubs played the important role in cultural and social life of a society. This type of buildings has passed a long way of development, beginning from construction of the "workmen's club" "club of trade unions" or "recreation centers" of a factory or an enterprise in the twenties of the last century up to creation in our time the modern, large-scale cultural centers, the art centers, the centers of cultural evolution. This type of buildings has a very interesting history comprising both the periods of rapid development and periods of degradation. Like other types of buildings, the cultural-educational centers have their own periodization and stages of development.

The early generation of this type of constructions was fairly rapid. Workmen's clubs, national houses, palaces of workers were the new elements which have originated in the bowels the old system. They have passed a rough way of development; they have undergone the essential modifications in structure in order to correspond to requirements and needs of that time. One of the main issues which should be solved was the creation of the urban public institutions which could consolidate and be of equally interest for various social and age groups of population. That is to say these buildings met better requirement of communications, they were required for meetings, assemblages, "mass actions", and other arrangements that have been the integral part of the revolutionary epoch. These new types of public buildings